

NEW PRODUCTS

New Products Editor:
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DBMS accommodates a trillion bytes

Teradata Corporation has announced the DBC/1012, an integrated hardware and software database computer system that addresses up to one trillion (1T) bytes.

According to the company, the system offers the equivalent power of over 1000 microprocessors operating in parallel at one-third the cost of a general-purpose mainframe computer. It is expected to satisfy the expanding database requirements of industries such as banking, insurance, oil, manufacturing, consumer goods, and government.

The DBC/1012 attaches to an IBM (or equivalent) mainframe. Current release is for a MVS, MVS SP operating system, but the company is also planning a VM/CMS release.

Key to the processing power of the DBC/1012 are multiple parallel microcomputer modules with dedicated disk storage. All modules communicate with each other across an intelligent network, the company's Ynet that consists of an active logic array for system throughput faster than that of a general-purpose computer. Interfacing the DBC/1012 with the host computer is the IFP interface processor, which translates host re-

quests into internal commands and forwards them through the Ynet to the access module processors. AMPs receive requests forwarded by the IFPs, perform the required data manipulation, then send appropriate responses back over the Ynet to the IFPs, which return responses to the host requestor.

Associated with each AMP is a compartmentalized disk storage unit. A section of disk space is allocated to the system for resident system programs and tables. Another section is the primary data area that stores the primary copy of data for normal access, and a third section is the 'fallback' copy area accessed when the primary copy is temporarily unavailable.

The DBC/1012 system console is an intelligent CRT display terminal that can be connected directly to any IFP or AMP. This console allows an operator to communicate with other processors over the Ynet.

Both the IFP and AMP employ CPUs consisting of 16-bit, 8086 microprocessors and 8087 numeric data processors. Memory modules for both the IFP and AMP contain 2M bytes of RAM, plus error checking and cor-

rection that automatically corrects single-bit errors. Ynet memory contains 32K bytes of high-speed RAM to buffer message blocks.

Expansion does not compromise the DBC/1012's fault tolerances, according to Teradata. As the database grows, the user adds processor modules, allowing databases to increase to one trillion bytes. If one of the parallel subsystems should fail, another similar subsystem takes its place automatically.

Software in the DBC/1012 is the company's query language, Tequel, used for data definition, manipulation, query, and control. The interactive query language, Iteq, provides non-technical users with access to the DBC/1012 through a terminal connected to the host computer. A library of access routines simplifies the interface with the host computer.

The basic DBC/1012 system, priced at \$480,000, includes six microprocessors, 2.5M ips, 1.9G bytes of data storage, plus full relational software, host interface software, and database utilities. Add-on components are priced at approximately \$60,000 per million ips and \$37 per megabyte of add-on disks.

Reader Service Number 25

32-bit system supports real-time applications

The Classic 32/85 from Modular Computer is a 32-bit, real-time superminicomputer that is fully compatible with its 16-bit predecessors. The 32/85 has up to 64M bytes of multipaged physical memory and addresses up to 1G byte of virtual memory.

The nucleus of the system is a 64K-byte cache memory, a memory management unit, a context file containing 128 banks of general-purpose registers, an ALU, and firmware-coded transcendental functions. The system also features a dual bus I/O controller, and a maintenance console with floppy disk drive for system loading and diagnostics. The complete system with up to 8M bytes of memory and console controller mounts in a single cabinet.

The Classic 32/85 will execute under the Max IV operating system or under the Max 32 operating system derived directly from the Max IV. All application software written on any Classic computer is portable to the model 32/85.

The Classic 32/85 can address up to 64M bytes of physical memory in increments of 2M bytes of error-correcting memory. The multipaged memory enables concurrent parallel transfers, through up to six ports. It also allows shared memory and multiprocessor configurations.

Other features include an extended microinstruction word length of 104 bits, a 100-ns speed to register instructions, a multiple-vector interrupt system that can switch up

to 16 mapping caches (each 128 registers) and up to 128 sets of 15 general-purpose registers (each 32 bits wide), support for two I/O controllers per CPU, and a maximum I/O throughput of 8M bytes per second. Up to 64 DMA devices can be attached on each CPU.

The Classic 32/85 in a basic configuration, including CPU, two I/O controllers, 2M bytes of memory, maintenance subsystem, and console controller, is priced at \$148,500 in single-unit quantities. Additional memory is priced at \$12,000 for a 2M-byte board.

Initial deliveries are planned in the second quarter of 1984, with production quantities in the third quarter 1984.

Reader Service Number 26

Portable 16-pound computer is IBM compatible

Commuter, designed by Visual Computer Inc., is a 16-pound, 16-bit IBM-compatible personal computer with a base price of \$1995.

Packaged in a 15" x 18" x 3" attache case, the model features 128K bytes of system memory resident on a multilayer PC board and expandable to 512K bytes; the MS-DOS 2.1 operating system; an 83-key keyboard with all IBM functions and identical keyboard layout; 5¼-inch double-sided, double-density 360K-byte floppy disk drive (additional drive optional); bit-map color graphics support; parallel port; RS-232-C serial port; RGB direct-drive output for high-resolution monochrome or color monitors; composite video output; power-up diagnostics; and a connector for integral IBM expansion chassis support for additional IBM memory cards and hard disk.

Reader Service Number 27

Software creates application programs sans runtime package

Data Management Associates has developed the Magic/MPS, a medium-level portable language that creates applications programs without a runtime package. The instruction set, through the Magic compiler, allows the creation and maintenance of machine-executable programs.

Other features of the Magic/MPS include internal data areas that are completely variable with buffers, fast BCD arithmetic with up to 36 digits, simplified screen formatting and data editing, the ability to mix handwritten assembly language anywhere in the source code, total string manipulation capability, control over peripherals, and conditional compilation of source code.

Magic/MPS/80 for all CP/M systems is priced at \$795. Magic/MPS/86 for CP/M-86 and MS-DOS systems is available for \$995.

Reader Service Number 28

Sales planning software runs on more than 40 systems

National Microware has introduced the Sales Planner to help sales professionals significantly reduce paperwork.

The program is designed to help non-computer specialists maintain customer and prospect lists; generate expense reports for any time period; type letters, memos, call reports, etc.; print labels and envelopes for mail lists; maintain appointment schedules by day, week, or month; and produce sales forecasts and analyses.

The Sales Planner operates on more than 40 different personal or transportable computers, including IBM, Apple, Osborne, Kaypro, DEC, and Eagle.

Available in 5¼-inch and eight-inch floppy disk versions, the Sales Planner sells for \$295.

Reader Service Number 29



Commuter, from Visual Computer, Inc., is a 16-pound portable IBM-compatible personal computer designed for business professionals whose work demands travel and who want the flexibility to work at home.

Business computer system offers six operating systems

SMC-Intech has announced the Series 8600 MP, a business computer system that is expandable to four workstations and offers the CP/M, MS-DOS, Oasis-16, Unidol, MP/M 86, and Thoroughbred operating systems.

The system features two video displays and two keyboards and operates from a 16-bit 8086 CPU. Also standard are a 256K-byte

RAM, a 20M-byte hard disk unit, and a 640K-byte floppy disk drive. Standard software includes a general ledger, accounts receivable and accounts payable package.

The Series 8600 retails for \$11,000.

Reader Service Number 30



The Series 8600 MP from SMC-Intech is a multi-user system designed for the small business. It features two video displays and keyboards, a 16-bit 8086 CPU, and a 256K-byte RAM and expands to support up to four workstations.

MATH/PROTRANTM

IMSL's Natural Resource for Mathematical Problem Solving

Mathematical problem solving can be involved and time consuming, but it doesn't have to be. MATH/PROTRAN, one of IMSL's Natural Resources, is a powerful system for the professional who expects a straightforward approach to problem solving.

You don't need any programming knowledge to use this remarkable system. In a surprisingly short time, MATH/PROTRAN is at your command. Convenient "help" files provide on-line reference, and the system automatically checks your statements for errors.

MATH/PROTRAN lets you define problems naturally, in a few simple statements — and gives you effective solutions to problems involving interpolation and data smoothing; integration and differentiation; eigenvalues and eigenvectors; differential, linear and non-linear equations; as well as other mathematical procedures.

If you're currently solving problems using FORTRAN, you'll appreciate the ability to combine FORTRAN and PROTRAN statements for tailored problem solving. This added measure of flexibility sets MATH/PROTRAN apart from other systems of its kind.

MATH/PROTRAN is a member of the PROTRAN family of problem-solving systems for statistics, linear programming and mathematics. These systems use accurate, reliable numerical techniques to give you the consistently dependable results you have come to expect from IMSL, a world leader in affordable technical software.

MATH/PROTRAN is the natural resource for a wide variety of mathematical applications. And the low subscription rate makes this powerful system extremely affordable, even if only one person in your organization uses it.

To find out more about MATH/PROTRAN, return this coupon to: IMSL, NBC Building, 7500 Bellaire Boulevard, Houston, Texas 77036, USA. In the US call toll-free, 1-800-222-IMSL. Outside the US and in Texas, call (713) 772-1927. Telex: 791923 IMSL INC HOU.

Please send complete technical information about MATH/PROTRAN.

Name _____

Dept. _____

Title _____

Organization _____

Address _____

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State _____

Zip _____

Area Code / Phone _____

Computer Type _____

CM24

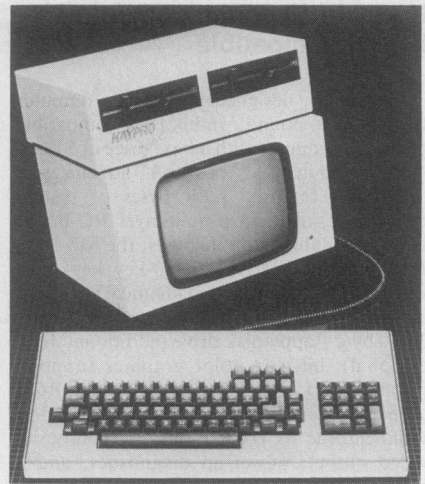
The IMSL PROTRAN problem-solving systems are compatible with most Control Data, Data General, Digital Equipment and IBM computer environments.

IMSL

Problem-Solving Software Systems

Reader Service Number 4

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The Robie desktop computer from Kaypro features two 2.6M-byte floppy disk drives and occupies about one square foot of desk space. A 300-baud built-in modem allows communication over standard telephone lines. The nine-inch, nonglare screen can be titled and dual disk drives can be mounted on top. Priced at \$2295, the Robie comes with ready-to-run programs, including word processing, spelling checkers, electronic spreadsheets, database management and programming languages.

Reader Service Number 31

TRS-80 with 15M-byte hard disk supports four users

Radio Shack's TRS-80 256K 1-Disk Model 16B microcomputer is equipped with a self-contained 1.25M-byte, 8-inch floppy-disk drive and a 15M-byte hard disk drive that allows access to 15 million characters of information. Another 12M-byte external hard-disk drive can be added for a total of 9,000 pages of hard-disk storage.

The Model 16B runs the TRS-Xenix multi-user operating system—with the addition of two DT-1 data terminals and connecting cables—which allows three users simultaneous access with no loss of performance. Data in the Model 16B can be stored on the hard disk; files can be shared or restricted to certain users only; and peripherals such as printers, plotters and modems, can be shared. A variety of multiuser software and the TRS-80 Model II and Model 12 programs for single-user operation are supported on the system.

The Model 16B's design features Z80A and MC68000 16/32-bit microprocessors; a 12-inch green video display; a detachable keyboard with a numeric datapad; two RS-232-C serial interfaces; and a parallel printer interface. For greater expandability, the Model 15B features a built-in, user-accessible card cage. Four plug-in expansion slots allow the addition of an RS-232 card for three more users or additional memory.

The 256K 1-Disk Model 16B with 15M-byte hard disk (26-6006) is \$6999.

Reader Service Number 32

COMPUTER

Portable micro has IBM-PC compatibility

Applied Computer Techniques, a British company, has introduced Apricot, an IBM-compatible, 8086-based microcomputer that includes 256K bytes of main memory; the MS-DOS, CP/M-86, and concurrent CP/M-86 operating systems; 3.5-inch Sony microdrives, each with 315K bytes of storage; an integral calculator; and bundled software. The Apricot features an 80-character Microscreen built into the keyboard and six associated touch-sensitive keys. The screen doubles as a "window," displaying two 40-character lines that allow the computer to operate without its CRT monitor. When first turned on, the computer presents a listing of available application packages with prompts on how to run them, operating system utilities, disk copying routines, and a font generator for customized screen text. All keys on the Apricot, including control functions, can be reprogrammed to produce any sequence of ASCII codes. The

current functions of the six Microscreen keys are displayed for the software in use. Eight other fixed-function keys provide one-stroke operations common to virtually all application software and all keys on the keyboard can be reprogrammed for any software package.

Software bundled with the Apricot includes the Supercalc electronic spreadsheet and the Superplanner executive calendar, Microsoft Basic and Personal Basic, an asynchronous communications package, and a transfer utility to download software from the IBM PC.

The Apricot weighs 17.5 pounds when used in its portable mode. The screen is a nine-inch, high-resolution CRT with 800 × 400 pixels and a graphics capability.

The price of the Apricot starts at \$2495. The twin disk system with monitor lists for \$3190.

Reader Service Number 34

Hand-held computer has memory of up to 16K bytes

Casio has introduced the PB-700 hand-held personal computer with a 4K-byte memory expandable to 16K bytes.

The PB-700's LCD accommodates four lines of 20 characters in upper- and lower-case letters and is dot addressable to allow the display of graphs and charts.

Other features of the PB-700 include one-key Basic commands; full editing features; beep tones to signal I/O; automatic shut-off after several minutes of non-use; and the ability to interface with the FA-10 plotter/cassette, a 4½-inch-wide four-color plotter powered by internal rechargeable batteries. The FA-10 can print up to 80 characters across the paper and can hold a paper supply or use a large size external roll. A standard cassette recorder can be used with the FA-10 to store or load programs or data.

An optional CM-1 micro cassette module that fits into the FA-10, enables the user to store programs or data on a micro tape.

The PB-700 alone costs \$199.95; the FA-10, \$249.95; and the CM-1, \$89.95.

Reader Service Number 33



Casio's PB-700, shown here with the FA-10 four color plotter and the micro cassette module for program storage, is 8 × 11½ inches and weighs 4.5 pounds with all options.

Software teaches Cobol to TRS-80 users

Radio Shack has designed software to teach secondary and college students and adults Cobol for TRS-80 Models II, 12 and 16, either in self-teaching or in a classroom.

The package contains a manual and a diskette with hands-on exercises and can be used with any TRS-80 Model II, 12, or 16 disk system with at least 64K bytes of memory. The Radio Shack Cobol development system is also required.

The user is introduced to the TRS-80 and programming logic, as well as to Cobol, and can program, edit, and debug while progressing through the course. The instructional diskette also contains a complete copy of the programs that appear in the manual, giving users the option of modifying or rerunning any of the sample programs. Interactive quizzes on each unit are on the instructional diskette, with the computer providing appropriate feedback for right and wrong answers.

Cobol for TRS-80 Models II, 12, and 16: Volume One is available for \$49.95.

Reader Service Number 35

System features 10-MHz speed and choice of three OSs

SBE, Inc., has introduced the SBE-250, a 68000-based computer system with 10-MHz processing speed; a no-wait-state, dual-ported RAM; a choice of three operating systems; and a six-slot Multibus card cage for expansion.

Designed for the system integrator, industrial OEM, and research engineer, the standard SBE-250 computer has 256K bytes of local RAM, 320K-byte 5¼-inch floppy disk storage, 10M-byte 5¼-inch Winchester disk storage, a parallel I/O port, and two serial I/O ports. The



The Texas Instruments' portable professional computer provides identical features of the desktop TI professional computer and uses all software and hardware available for the larger unit. Retailing at \$2395, the unit has 64K bytes of RAM, a 9-inch monochrome display (color is optional), and a single 5¼-inch diskette drive.

TI offers portable professional computer

Texas Instruments now has a portable computer fully compatible with the desktop TI professional computer. Available with a built-in 9-inch color or monochrome display, the TI portable professional computer offers high-resolution graphics, memory expansion up to 768K bytes, internal modems, an optional 10M-byte Winchester disk drive and software programs such as MS-DOS, Lotus 1-2-3, and TI's Natural Link access to the Dow Jones News/Retrieval. Also available are TI's Speech Command system and support for the Ether Series local area network. The portable model features a built-in storage compartment for cable and electric cords, a 16-bit 8088 CPU, a minimum 64K bytes of RAM expandable to 768K bytes, five expansion slots, and an integral 5¼-inch half-high floppy diskette drive with space for an additional built-in disk drive. Storage capacity of an individual floppy diskette is 320K bytes under MS-DOS 1.1 and 360K bytes with MS-DOS 2.1. The model's display incorporates a 25-line by 80-column format with a resolution of 720 × 300 pixels. The TI portable professional computer retails for \$2395 (monochrome display) or \$2965 (color display).

Reader Service Number 36

entire system fits in a desktop cabinet 17 inches wide and 5¼ inches high.

Options include a 40M-byte Winchester, a Centronics parallel printer port, and an intelligent 10-channel serial I/O board. The user may select the Unix-compatible Regulus, CP/M(68K), or Poly Forth/32 operating systems.

The SBE-250 is priced at \$4795 in OEM quantities.

Reader Service Number 37

68000-based business systems feature Unix System III OS

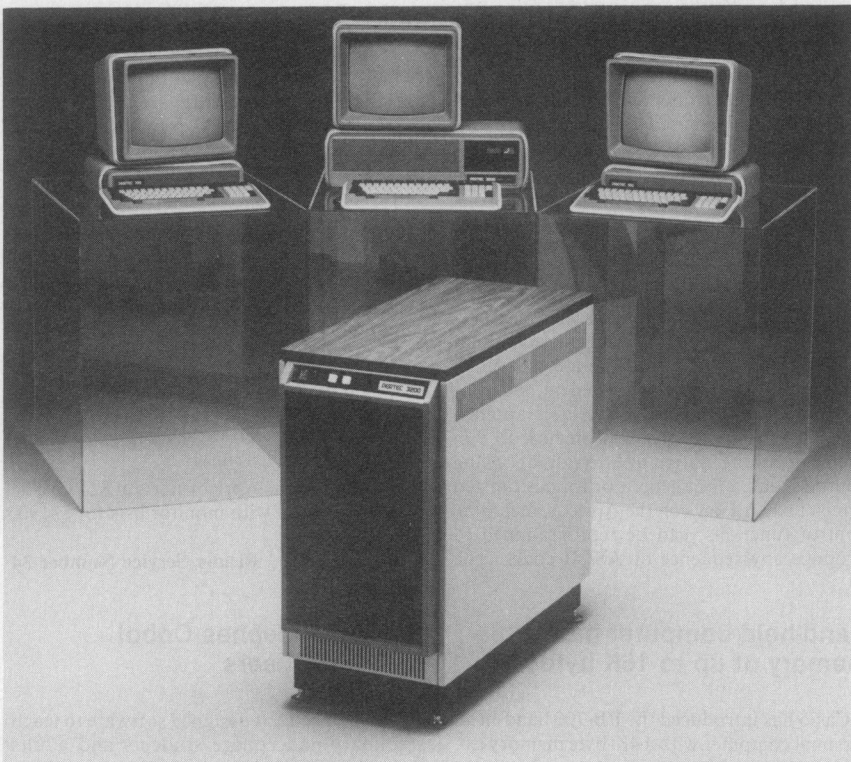
Pertec Computer Corporation has released the System 3200 product line, which offers two desktop models and two floor-cabinet systems that support multitasking, single and multiple users (via coaxial cable), and several popular languages, including Basic Four- and SMC-compatible Basic and RM/Cobol. Bell Laboratories' Unix System III operating system is offered on some models, and applications developed under CP/M can be supported by any System 3200 model.

The Model 3205 desktop system is a single-user business computer with 256K bytes of RAM (expandable to 1M byte), three RS-232 ports for printers and/or data communications, an adjustable monitor, a detachable keyboard, an integrated intelligent workstation and two 5¼-inch (1M-byte unformatted) floppy disk units.

The Model 3215, a multiuser system supports up to five intelligent workstations using a coaxial cable and offers users one 5¼-inch floppy disk unit (1M-byte unformatted) and one 5¼-inch Winchester disk (13.33M-, or 26.66M-bytes unformatted) plus all the features of the 3205.

An optional floor-cabinet Mass Storage Subsystem with one or two eight-inch Winchester disks (35M- or 70M-bytes unformatted) and streaming cartridge tape drive is available for both the 3205 and 3215.

The two multiuser, floor-cabinet models in the System 3200 are the 3230 and the 3240. The Model 3230's basic configuration is 256K bytes of RAM, a microprocessor-based advanced station controller supporting up to 16 workstations and 15 printers, three RS-232 ports, a 21M-byte streaming cartridge tape drive, and an eight-inch, 35M-byte Winchester disk.



Pertec Computer Corporation is offering the System 3200 product line with two desktop and two floor-cabinet models. Capabilities range from single-user support to control of 32 workstations and 30 printers.

The Model 3240 includes 1M byte of RAM, three RS-232 ports, two advanced station controllers supporting up to 32 workstations and 30 printers, a 21M-byte streaming cartridge tape drive, and an eight-inch 70M-byte Winchester disk.

A multidrop coaxial cable interface links all

workstations to any System 3200 host. Data transmission rate is approximately 250K bps.

Suggested retail prices for the System 3200 members are from \$5000 to \$34,000 for the basic systems.

Reader Service Number 39

Desktop message switch accommodates 24 ports

Sidereal Corporation has developed a 68000-based message communications switch, a desktop unit that operates as a network node, electronic mailbox, and data collection system at line speeds of 50K to 56K baud. Available as a complete hardware and soft-

ware combination or as an unbundled system, the Micronet Message Switch is 20 inches square and can accommodate up to 24 ports.

The store-and-forward system offers network management, message processing, and store-and-forward switching. Other features include forced delivery capabilities, electronic mail, and the ability to act as a front-end processor for a corporate mainframe. Switches can also be networked to form expanded systems.

The system consists of four modular units. The system control unit comprises a 16/32-bit CPU with 512K-byte RAM (expandable to 1M-byte), the console controller, and up to four communications controllers. The mass storage unit consists of a hard disk of from 5M to 80M bytes and a 1.2M-byte floppy disk. The supervisory console features a 12-inch 25 line × 80 character tiltable video display with detached keyboard. The system printer in base configuration is a dot matrix unit with a speed of 120 cps.

The Micronet Message Switch costs from \$65,000 to \$95,000, depending on the configuration.

Reader Service Number 38

Publishing system offered with Sun Microsystems workstations

The Office Publishing System OPS-2000 by Interleaf, Inc., is a computer-aided publishing system that will run on Sun Microsystems workstations. This system produces illustrated documents and will accept text from several of the most popular word processing systems, including the IBM PC, IBM-compatible microcomputers, and Wang word processors. Designed for the office automation market, the OPS-2000 fully integrates advanced multiple-font word processing, business graphics, diagramming, and high-speed laser printing.

Reportedly, office workers can learn to use the system in a few hours for the production of client proposals, project and technical manuals, contracts, and management reports.

The OPS-2000 software is available bundled with the Sun Microsystems 32-bit workstations at \$62,500 and includes the software, a high-speed laser printer, and the Motorola 68010 microprocessor-based workstation. The software is available separately to Sun users at a first copy price of \$8000.

Reader Service Number 40



Sidereal Corporation's microprocessor-based store-and-forward message communications switch is a desktop unit that accommodates up to 24 ports.



The Metamorph intelligent graphics console from Companion Computer Corporation includes standard features such as a bit-mapped display with an independent graphics controller and 128K-byte display memory; expandable 64K-byte user memory; 8087/8088-based distributed processor architecture; industry-standard DEC and Tektronix terminal emulators; a choice of detached IBM PC or DEC VT-100 formatted keyboards; and multiple hardware interfaces for communications and peripheral connections. Options include Winchester and floppy disk storage controllers, impact matrix printers, and input devices such as a user-programmable mouse or light pen.

Reader Service Number 41

Hard-disk unit expands portable computer line

Modular Micros has introduced a hard-disk version of its Zorba series of portable computers. The 2000HD incorporates a 5¼-inch, 10M-byte Winchester disk drive packaged with one 800K, flexible diskette drive and features a Z80A microprocessor, 64K of user memory, CP/M 2.2 operating system, and a 9-inch, green or amber, self-contained video display that weighs 25 pounds.

Practical for accounting, finance, legal, and other business applications, the portable offers bundled software, including Wordstar, Mailmerge, Calstar, Spellstar, Infostar, C-Basic, and M-80, and emulates with a floppy disk 30 different disk formats, such as Xerox 820, DEC VT-180, Osborne, Kaypro, and Televideo. The unit provides a full ASCII keyboard with 19 special function keys capable of up to 55 programmable functions; terminal communications capability with a host computer; and a built-in power supply selector which is suited for either 110V or 220V operations.

The Zorba 2000HD is scheduled for delivery in March 1984 with a suggested retail price of \$2995.

Reader Service Number 42

Xerox professional computer features 8/16-bit processors

Xerox Corporation's 16/8 Professional Computer is designed for use as a stand-alone unit or as workstation in an office communications network. It has both a 16-bit processor with 128K bytes of memory expandable to 256K bytes and an eight-bit processor with 64K bytes of standard memory, permitting simultaneous execution of separate applications programs.

The 16/8 has a 12-inch, 24-line, 80-character display screen, with high/low intensity, inverse video, and graphics capabilities. An optional antiglare screen filter is also available. The computer's low-profile keyboard includes 18 function keys (12 are user-definable), a 10-key numeric pad, cursor keys, a Help key, and a coiled cable.

Users can store 155K to 322K characters on single- or double-sided 5¼-inch disks or eight-inch disks; an optional 10M-byte rigid disk is also available. Each 16/8 includes three operating systems, the CP/M, CP/M-86, and MS-DOS.

The Xerox 16/8 is priced from \$3395 to \$5295, depending on storage capacity.

Reader Service Number 43

PC software series adds payroll module

Computech Group, Inc., has released payroll software for the IBM Personal Computer and PC-XT. Solomon III Payroll is an integrated accounting package written for 16/32-bit computers.

All entry forms in Solomon III Payroll are graphically displayed, and the system includes a Help key so that users can ask about the system without disturbing accounting functions.

The system prints checks, 941 reports, and W-2 statements. The number of employees handled is limited by available disk space.

Compatible with the requirements of all states, the program offers user-definable earnings types (such as regular, overtime, vacation, and tips). All tax rates are held in tables. There is virtually no limit to the number of user-definable deduction types, including exemptions and credits.

Other features include multiple payroll checking accounts, the choice of handwritten or system-printed checks, check reconciliation, and password protection for security.

The cost of Solomon III Payroll is \$595.

Reader Service Number 44

Super-micros offer 35M-byte and 64M-byte disk storage

The 32-bit Universe 68/35 and Universe 68/67 are being offered by Charles River Data Systems. The two models feature a 12.5-MHz 68000 microprocessor; a 32-bit Versabus I/O bus; 32-bit main memories, 32-bit disk channels; and a 32-bit, 4K-byte cache memory that allows the 68000 to run at full speed with no wait states.

The 68/35, which can support 64 users, has a 5½-inch Winchester disk with a formatted capacity of 35M bytes, a 3M-byte main memory, and eight-inch, double-sided, double-density floppy disks for program loading and backup storage.

The Universe 68/67 uses an eight-inch Winchester disk with a formatted capacity of 64M bytes. A built-in 45M-byte streaming tape drive provides system backup. Main memory is 512K bytes, expandable to 5M bytes.

Both models support the Unix operating system and the Unix-compatible Unos, the company's real-time operating system. The Universe 68/67, equipped with 512K bytes of main memory with byte parity, 64M bytes of disk storage, and a streaming tape drive with 45M bytes of storage capacity, is priced at \$24,900.

Reader Service Number 45



Two 32-bit systems from Charles River Data Systems use large-capacity Winchester disks. The Universe 68/35, left, has 35M bytes of Winchester disk storage and 1.25M bytes of floppy disk storage. The Universe 68/67 has 64M bytes of disk storage and a 45M-byte streaming tape drive.

Natural language option offered for micros

Microrim, Inc., has introduced CLIO, a conversational language inquiry option designed for use with the company's R:base series 4000, a relational database management system for personal computers.

The CLIO allows the user to build a dictionary of synonyms for words or operations associated with a database. The user queries the computer with a word or series of words not already in the database vocabulary, and the CLIO responds with a series of questions to

direct the user to define the unfamiliar terms. Through this "conversation" between the language option and the user, new words are built into the database vocabulary.

The CLIO can also search through the database to retrieve records using adjectives or qualifying terms. For example, the user can ask the database for "a list of the top three salesmen (in order) for 1983," or to "list all employees who have above-average salaries" followed by "what are their birthdates?"

Another feature of the CLIO is that it can make inquiries simultaneously into five different files from the 40 files available concurrently in R:base.

According to the company, CLIO will accompany R:base, which requires 256K bytes of memory and operates on PC-DOS, MS-DOS, CTOS, BTOS and Unix. The interface will sell for \$200; R:base is priced at \$495.

Reader Service Number 48

Streamer reads/writes both 9- and 16- track tape

North Atlantic Industries has developed the Qantex Jetstream 16, a streaming cartridge tape system that can read and write as both a nine-track tape and a 16-track tape and has up to a 99M-byte capacity when used with 555-foot cartridge tapes.

The Jetstream 16 is both QIC 02 and QIC 24 compatible, and four- and nine-track tapes currently adhering to the QIC 24 format can be read. The streamer's 16-track capability was achieved by adding seven tracks and microprocessor intelligence to distinguish between four-, nine-, and 16-track tapes. Designed to ensure backup storage for Winchester disks in the 30M-byte and higher ranges, the Jetstream 16

provides up to 80M bytes of formatted data on a standard DC 300XI data cartridge. The streamer also reads and writes the industry-standard nine-track QIC 24 format. Burst transfers of up to 400K bytes per second are possible, and an average transfer rate of 72K bytes per second is required to maintain streaming.

The streamer has an intelligent controller with two separate microprocessors: one for the tape drive, the other for the controller. These microprocessors allow features such as automatic reference burst location, automatic cartridge (type) identification, automatic error logging, and a series of automatic diagnostic tests at power-up and cartridge insertion.

The Jetstream 16's interface is electrically compatible with the QIC 02 interface specification, and internal communications protocols use the basic QIC command set and timing, making the interface compatible to the standard QIC level.

Other features include up to five buffers to keep track of and preserve data integrity and a directory for locating and directly selecting the correct file.

In single quantities, the Jetstream 16 including controller is priced at \$1450. In OEM quantities of 500 units, the price is \$925.

Reader Service Number 49

Micro based on 10-MHz 8086 CPU

Seattle Computer has developed the Gazelle II, a 16-bit microcomputer for software development, engineering, scientific, and business applications. The Gazelle II is based on the 10-MHz Intel 8086 CPU and uses a proprietary memory design that enables it to achieve processing speeds and throughput comparable to many minicomputers.

The system, housed in a cabinet with optional casters, incorporates 256K bytes of system memory, two double-sided, double-density eight-inch disk drives, two RS-232-C ports, one Centronics parallel port, and space for an optional hard disk drive. The Gazelle uses an 18-slot regulated S-100 motherboard,

for expansion and adaptability in OEM applications.

Options include a 15.7M-byte (formatted capacity) Winchester hard disk, an 8087 numeric data processor, additional system memory (expandable to 1M-byte), and additional serial I/O ports. Software provided with the Gazelle II includes the MS-DOS with complete development utilities; a full-screen editor; Flash Disk, a RAM-disk emulator; and Flash Print, a print buffering utility.

The standard configuration of the Gazelle II is priced at \$7995.

Reader Service Number 46

Software compatibility stressed in 68000-based PC

Micro Craft Corporation has introduced the Dimension 68000 professional personal computer, a single unit designed to process Apple, IBM, KayPro, and other CP/M-based software. With its 32-bit MC68000 microprocessor, Dimension offers up to 16M-bytes of main memory for business, engineering, and scientific applications. According to the company, businesses can use the programs and languages they are most familiar with and Dimension will configure to that format. For engineering and science purposes, Dimension can accommodate a variety of scientific coprocessors and peripherals for specialized functions, including high-resolution graphics, matrix processors, floating point coprocessors,

plotters, tape drives, digitizers, light pens, and analog data capture units.

The Dimension PC provides 128K RAM (expandable to 16M), two 5 1/2-inch floppy disks with 400K each, a built-in RS-232-C interface with full-duplex modem control, and a built-in Centronics-type parallel interface. Also included is a disk controller that can drive four 5 1/2-inch and four 8-inch floppies, a graphics controller, a real-time clock, an IBM Selectric-type keyboard with a numeric pad and 10 programmable function keys, plus the CP/M-68K operating system.

Dimension sells for \$3995.

Reader Service Number 47

Freeform DBMS combines with word processing

Ideaware offers writers and researchers a hybrid software package for the IBM personal computer. The Idea Processor combines the functions of a freeform card-file DBMS with a word processor; it also handles graphics and columnar information. The filing system accepts anything that can be displayed on up to four screens, since each filecard holds up to 8K bytes of data, including notes, graphics, numbers, or code.

Any number of labels, called keys, can be assigned to each filecard. The keys can be used either individually or in combination to search through the information on file.

Filecards can be created or modified using the editor from the word processing element, or the editor can be used to modify or embellish text, data, and graphics from several graphic and spreadsheet software packages, including Lotus 1-2-3, Chartman, Visi-Grand and Dgraph.

Up to 64,000 filecards can be stored in a single drawer, the idea processor's cardfile, which provides up to 10 drawers in a single cabinet; the number of cabinets is limited only by disk space.

The Idea Processor retails from \$295. Minimum system requirements are an IBM personal computer or compatible machine with 192K bytes of memory and two double-sided drives; a printer is optional.

Reader Service Number 50

Unix-based micros designed for business users

Models C5012V and C5012D from Onyx Systems are Unix-based multiuser microcomputers bundled with business applications software and a menu system. The C5012D is a desktop model, while the C5012V is a floor-standing unit.

The C5012D desktop model features 512K of RAM, five serial ports for connection with terminals, printers or modems, a Centronics-compatible parallel port for attachment to a high-speed printer, and a UPS port to attach to an uninterruptible power supply.

The system also includes a 5¼-inch Winchester disk drive with 14M or 21M bytes of storage and a 17M-byte cartridge tape drive (unformatted).

The C5012V floor-standing model offers options of additional 512K bytes of RAM, six more serial ports and a second 5¼-inch Winchester disk drive.

Prices for the Models C5012V and C5012D begin at \$11,990.

Reader Service Number 51

VME bus controller board supports up to four disk drives

Data-Sud System's VME bus, floppy disk controller board provides governing, formatting, and interfacing logic between the VME bus and up to four single- or double-sided, single- or double-density 5¼- or eight-inch floppy disk drives.

The DSSEFDCONT-1 is a double Eurocard board and incorporates a WD1793 floppy disk controller chip that furnishes IBM 3740 or IBM System/34 diskette-formatting. This board occupies 24K bytes of memory. The base address is jumper-selectable anywhere in the memory map.

The board features a hexadecimal display on the faceplate for disk status and disk test results, on-board sockets for JEDEC pinout EPROM (for software drivers), standard firmware that provides elementary commands for floppy management. The unit price of the DSSEFDCONT-1 is \$1375.

Reader Service Number 52

Instrument identifies dead components without contact

Metristast has designed an electronic test instrument called Thermoprobe to quickly identify dead components on PCBs without direct contact.

The solid-state device consists of a thermistor probe connected to a modified wheatstone-bridge circuit and is designed to measure temperature changes of 1/25 of a degree Fahrenheit (1/45°C). Since dead resistors, transformers, diodes, or ICs do not emit heat they can be quickly identified on the unit's built-in S-meter as the thermistor probe is moved within 1/16 inch of the PCB surface.

The 6-inch-long unit is operated by a nine-volt battery.

The Thermoprobe is available for \$21.95.

Reader Service Number 53



Japan news. Monthly office automation newsletter from Tokyo offers readers an exposure to technological advancements in Japan. *OA Japan*, Syntax Ltd., 2-6-8 Shibuya, Shibuya-Ku, Tokyo 150, Japan; (03) 498-2900, G3 Fax (03) 498-2275; \$80/year.

High-tech review. Monthly newsletter from Arizona offers readers information on Japanese Technological developments. *Japan High Tech Review*, PO Box 44952, Phoenix, AZ 85064; (602) 997-0666; \$295/year (US); \$335/year (overseas).

PC buyers guide. Evaluation forms—for systematic comparison of hardware and software combinations—are included in this guide for the "busy" buyer. *How to Select and Buy a Personal Computer*, Devin-Adair Publishers, 143 Sound Beach Ave., Old Greenwich, CT 06870; (203) 637-4531; \$9.95.

EI services. Newspaper for users and producers of electronic information services. *Information Today*, Learned Information, Inc., 143 Old Marlton Pike, Medford, NJ 08055.

Pascal programs. *Pascal Programs for Business* is accompanied by two diskettes containing 28 business Pascal programs written for and tested on the Apple II+, IIe, and III. Hayden Book Company, 10 Mulholland Drive, Hasbrouck Heights, NJ 07604; (201) 393-6306; \$49.95.

Microsoft Basic. Spiral-bound reference introduces users with programming knowledge to Microsoft Corporation's version of Basic, through examples that can be run as shown. Definitions of syntax and vocabulary follow each example. *Pocket Guide to Microsoft Basic*, Addison-Wesley, General Books Div., Reading, MA 01867; (617) 944-3700; \$7.25; 102 pp.

Super Calc. Written for both inexperienced and advanced users, this book offers over 60 Super Calc models. Each model comes with instructions for use, a sample worksheet, and a computer listing. *Super Calc Home and Office Companion*, Osborne/McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710; (415) 548-2805; \$15.95.

The world of Unix. New quarterly focuses on the concerns of Unix users and the micro world in general. *Unix/World*, Tech. Valley Publishing, 289 So. San Antonio Rd., Los Altos, CA 94022; (415) 949-3737; \$12.

Satellite disks. Guide to what's new in satellite TV and how to build your own earth station

and receiver. *The Satellite TV Handbook*; Howard W. Sams & Co.; 4300 W. 62nd St., Indianapolis, IN 46268; \$16.96.

Machine language programming. Starting with addressing and address space, user solves real-world problems and gets ideas from 63 applications. *Micro Cookbook: Volume II, Machine Language Programming*; Howard W. Sams & Co., 4300 W. 62nd St., Indianapolis, IN 46268; \$15.95.

The IBM Peanut. Answers a wide range of questions about the PC jr—who is it designed for, what comes with it, what can I do with it. *Introducing the IBM PC jr*; Howard W. Sams & Co., 4300 W. 62nd St., Indianapolis, IN 46268; \$12.95.

IBM PC business programs. More than 60 business application programs are given and all are fully documented. *IBM Programs for Business*, Hayden Book Co., 50 Essex St., Rochelle Park, NJ 07662; (201) 368-2202; \$15.95.

IBM PC talk for the inexperienced. Clear, easy instructions for running packaged software and a guide to PC-compatible accessories and services help all kinds of users. *Your IBM PC Made Easy*, Osborne/McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710; (415) 548-2805; \$12.95.

Help for Apple III users. Instructions for everything needed to operate the Apple III system are provided, including guides to peripherals. *The Osborne/McGraw-Hill Guide to Your Apple III*; Osborne/McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710; (415) 548-2805; \$17.95.

Wordstar for the new user. Written by a freelance journalist who struggled through computer jargon to learn, this guide is organized by the job that needs doing. *Wordstar in Everyday English*, Devin-Adair Publishers, 143 Sound Beach Ave., Old Greenwich CT 06870; (203) 637-4531; \$9.95.

Graphics for VIC-20 users. Applications with full explanations range from art and games to educational simulations, including color plotting and shape moving. *VIC Graphics*, Hayden Book Co., 50 Essex St., Rochelle Park, NJ 07662; (201) 843-0550; \$12.95.

Home computer software guide. Non-technical text describes packages on everything from personal finances to games. Rates performance of each according to system used. *The Osborne/McGraw-Hill Home Computer Software Guide*, Osborne/McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710; (415) 548-2805; \$11.95.